

REMARKS

Claims 1-23 stand rejected under 35 USC 112, second paragraph, as being indefinite. In particular, the Examiner states that “an organic compound (B)” recited in claim 1 cannot include “water” since water is an inorganic molecule. Applicants agree and have amended claim 1 to recite water separately from the organic compound (B). Accordingly, applicants respectfully request the Examiner to withdraw this rejection.

Claims 1-23 stand rejected under 35 USC 103(a) as being unpatentable over EP 0 900 808 by Hegi in view of Ohnishi. In particular, the Examiner states that EP 0 900 808 discloses a photo-polymerizable monomer (A) of unknown surface tension, an incompatible component, and a common solvent (C) while Ohnishi discloses a fluorine-containing photosensitive polymerizable monomer having the recited surface tension. Because these references would not have disclosed or suggested the claimed invention to a person of ordinary skill in the art, applicants respectfully traverse this rejection.

Applicants have amended claim 1 to recite a photo-polymerizable monomer (A) comprising “a fluorine atom or a silicon atom” and having a surface tension of not more than 25×10^{-5} N/cm. As explained in paragraph [0027] of this application, the claimed photo-polymerizable monomer (A) comprising a fluorine atom or a silicon atom with the surface tension of not more than 25×10^{-5} N/cm results in a porous film with excellent hydrophobicity. EP 0 900 808 fails to disclose or suggest using a photo-polymerizable monomer (A) comprising a fluorine atom or a silicon atom and having a surface tension of not more than 25×10^{-5} N/cm with an incompatible component and a common solvent (C) as claimed. In fact, EP 0 900 808 relates to a white coating and a photosensitive composition for the white coating which uses very different photo-polymerizable monomers to achieve completely different effects. The photopolymerizable monomers used in EP 0 900 808 are esters of compounds having an acryloyl group with polyhydric alcohols, not monomers having a fluorine atom or a silicon atom as claimed (EP, paragraph [0016]). In view of the

unpredictability that results from the change in structure of these chemicals, EP 0 900 808 neither discloses nor suggests the porous-material-forming photo-curing resin composition now claimed.

Further, EP 0 900 808 does not disclose or suggest the claimed invention in combination with Ohnishi. The Examiner alleges that Ohnishi discloses a “perfluorooctylethyl methacrylate” in column 8, lines 23-28, which exhibits the surface tension value recited in claim 1. Without dispute, perfluorooctylethyl methacrylate is a known chemical. However, neither Ohnishi nor EP 0 900 808 would have provided any motivation to a person skill in the art to combine these references in such a way as to obtain the claimed invention.

First, Ohnishi and EP 0 900 808 fail to disclose or suggest combining the fluoroocytylethyl methacrylate of Ohnishi with the incompatible organic compound (B)/water and a common solvent (C) of EP 0 900 808 to arrive at the claimed porous-material-forming photo-curing resin composition that exhibits hydrophobicity. Neither of the references discloses or suggests that such a combination would results in the claimed invention.

In addition, Ohnishi relates to a completely different invention—the formation of liquid crystal droplets in a polymer matrix (Ohnishi, column 6, lines 22-30), and all components used in the formation of liquid crystal droplets—the liquid crystal materials, radical photopolymerizable resin materials and solvents—are compatible with each other (Ohnishi, column 6, lines 30-39). A person of ordinary skill in the art would not have had any reason to combine a specific photosensitive compound disclosed in Ohnishi with the incompatible component (B) and common solvent (C) of EP 0 900 808 to obtain the claimed invention.

Furthermore, EP 0 900 808 fails to disclose or suggest that, by using a photo-polymerizable monomer (A) of certain surface tension, the claimed porous-material-forming photo-curing resin composition with excellent hydrophobicity may be obtainable. Ohnishi discloses, not just fluorinated (meth)acrylates, but the use of several different photo-sensitive materials, including chlorinated (meth)acrylates and other photo-sensitive materials (Ohnishi, column 3, line 34 to line

40). Chlorine atom substitutions tend to increase the surface tension rather than decrease the surface tension like fluorine atom substitutions. For example, the surface tension of polyvinyl fluoride is 28×10^{-5} N/cm, the surface tension of polyvinyl chloride is 39×10^{-5} N/cm, the surface tension of polyvinylidene fluoride is 25×10^{-5} N/cm, and the surface tension of polyvinylidene chloride is 40×10^{-5} N/cm. Thus, Ohnishi fails to disclose or suggest that controlling surface tension of the photo-sensitive material by selecting a fluorinated (meth)acrylates and combining it with other chemicals disclosed in EP 0 900 808 may result in the claimed invention. Accordingly, a person of ordinary skill in the art would not have been motivated even to attempt to combine the fluoride containing photosensitive material of Ohnishi with other ingredients of EP 0 900 808 to arrive at the claimed invention. Thus, applicants respectfully request the Examiner to withdraw this rejection for this additional reason.

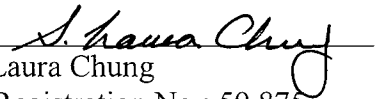
Claims 1 and 5 stand rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1, 2, 6 and 9 of U.S. Patent No. 6,447,877. Applicants have amended claims 1 and 5 to recite a photo-polymerizable monomer (A) comprising a fluorine atom or a silicon atom and having a surface tension of not more than 25×10^{-5} N/cm. Claims 1, 2, 6 and 9 does not recite the claimed photo-polymerizable monomer. Accordingly, applicants respectfully request the Examiner to withdraw this rejection.

In view of the above, each of the claims in this application is in condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejections of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing Docket No. 20455-2033900.

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